Gold Standard for the Global Goals

Template – Additionality Requirements for Afforestation/Reforestation Projects

Version 1 – July 2017

SECTION A. PROJECT DESCRIPTION

A. 1. Title of the project

Title: LAKE NAIVASHA BASIN REFORESTATION PROJECT
Date: 16/04/2018
Version no.: 1
Gold Standard ID: To be determined

A. 2. Type of project

☒ Afforestation/Reforestation (A/R)
☐ Improved Forest Management (IFM)

☒ Smallholder
☐ Microscale

SECTION B. ADDITIONALITY

Option of Additionality
☒ Option 1 – A/R CDM Tool ☐ Option 2 – Positive List For option 1, the format of the *A/R CDM Additionality Tool*[1] shall be followed and attached as supporting document. The requirements for retroactive submission and no deforestation (see boxes 3 and 4 below) shall also be fulfilled. For option 2, the requirements shall be filled in using the format provided by this template.

Option 1 – A/R CDM Tool

Supporting document ID:	N/A

Additionality was calculated by following a methodological tool to measure the baseline scenario and demonstrate the additionality in AR CDM project activities.

[1] A/R CDM Additionality Tool http://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-02-v1.pdf

The following steps were developed to demonstrate additionality:

- STEP 1. Identification of alternative land use scenarios to the AFOLU project activity;
- STEP 2. Barrier analysis or;
- STEP 3. Investment analysis;
- STEP 4. Common practice analysis.

STEP 1

Identification of alternative land use scenarios to the proposed A/R CDM project activity

STEP 1a Identify credible alternative land use scenarios to the proposed CDM project activity

Extracted text from the A/R CDM tool:

Identify realistic and credible land-use scenarios that would have occurred on the land within the proposed project boundary in the absence of the afforestation or reforestation project activity under the clean development mechanism (CDM).

The scenarios should be feasible for the project participants or similar project developers taking into account relevant national and/or sectoral policies and circumstances, such as historical land uses, practices and economic trends. The identified land use scenarios shall at least include:

The baseline to the Lake Naivasha area was constructed using reports from the IWRAP (Integrated Water Resource Action Plan Programme), LULC Analysis, PFMP (Participatory Forest Management Plan) of the Geta and Kinangop areas, and the Smallholder Agricultural Framework of the WWF.

Furthermore, additional background information was compiled from previous communication with relevant stakeholders and LULC change analysis of a similar area (Lake Nakuru).

Lake Naivasha is a privileged location as various important resources are concentrated here, namely water, fertile soils and geothermal energy resources. This enables and encourages the settlement of people and business and is the main cause for the expansion of foreign and domestic investment in floriculture and horticulture (Githaiga et al., 2017a). The development of these activities, together with the availability of land, stimulate urban expansion in this site, as people tend to move into areas where resources and jobs are more abundant.

The main land uses vary between traditional pastoralism, subsistence and smallholder farming, dairy and beef farming, and technologically-advanced international vegetable and flower farming operations. Tourism and geothermal energy production are also important activities in the area (WWF, 2012).

Alternative Scenario 1

Agriculture

In developing countries, commercial agriculture is the most prevalent deforestation driver, accounting for 40% of deforestation. This is most prominent in the early-transition phase. The other important land use is local/subsistence agriculture, which is related to 33% of deforestation (Hosonuma et al., 2012). In Naivasha, agricultural production is mainly commercial or subsistence.

In Kenya, from independence in 1963 to the oil crisis in 1973, the agricultural sector expanded by undergoing two

basic changes: first, widespread acceptance of private ownership (replacing communal ownership) and cash crop farming; secondly, the success of intensive nationwide efforts to expand and upgrade the production of African smallholders. Agriculture has historically been, and remains, the country's most dominant economic sector. It is the largest contributor to Kenya's GDP, averaging between 20-25% of total value (Alila and Atieno, 2006), and recording its highest growth in 2012. (Softkenya, 2017).

Agriculture has historically been and remains Kenya's most dominant economic sector, and the largest contributor to the country's GDP averaging between 20 – 25% of the total value (Alila and Atieno, 2006).

In 2017, agriculture was the main contributor to Kenya's economic growth of 4.6 %, up from 4.4 % in 2011. According to the Kenya National Bureau of Statistics (KNBS) 2013 Economic Survey, agriculture, which grew by 3.8 %, contributed 17.6 %of the overall Gross Domestic Product (GDP).

The agriculture plays an important role in Kenya's economy which employs 70% of country's labour force or around 10 million people. As an agro-based country, land is one of the most important resources in the country. Land resource in Kenya faces major challenges particularly due to population growth. This creates pressure on land resources and leads to poor land use practices such as intensification of cultivation, expansion of cultivated land, overgrazing and harvesting of trees for fuelwood. As the consequences, the degradation of the environment would finally leads to lower productivity of natural resources (Agustina, 2008).

In Naivasha, the agriculture production is mainly aimed for subsistence and commercial uses.

On the other hand, the floriculture/horticulture activities represent a major economic development factor in the area. The floriculture industry represents more than 60% of the country's horticultural sub-sector, representing 1,5% of the national GDP and up to 8% of the country's exportation revenues (Adeya, 2006).

The property size for the small landowners is reducing significantly, being predominantly smaller than 2.5 ha. The rights are passed as inheritances, which means that they are divided and distributed between several siblings. This causes the farm sizes to be reduced, preventing the use of conservation measures like fallow. Therefore, the fertility and the quality of the soil is falling. It also reduces the available space for cattle grazing (Githaiga et al., 2017a).

Alternative Scenario 2

Urban settlements / Urbanization

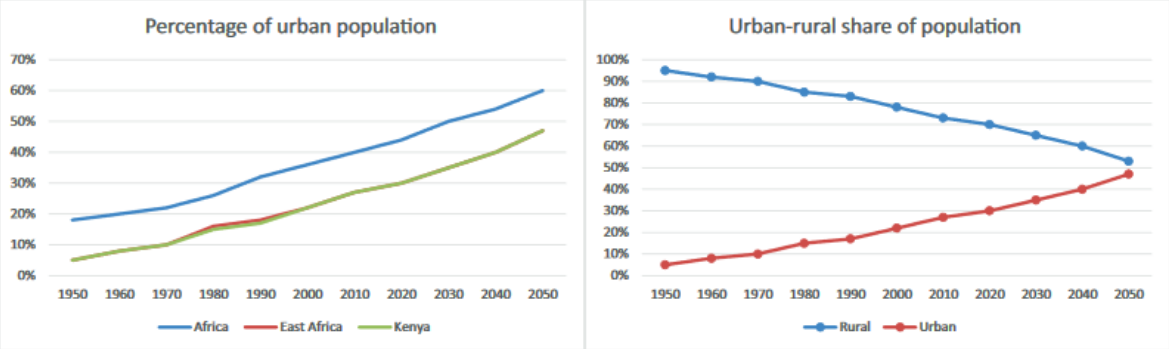
The population pf the basin increased 64% from 1989 to 1999, a period which simultaneously saw the expansion of the horticulture industry. The commercial horticultural sector employs approximately 25,000 people directly and approximately the same number in related activities. Most of these companies pay above the minimum wage and provide auxiliary services, an uncommon practice nationwide. These labour conditions make this economic activity, and so the Lake Naivasha area, very attractive to economic migrants (WWF, 2012).

Migration towards the Lake Naivasha basin is likely to continue as there remains a perception of better livelihood opportunities in the area. The formal employment to population ratio is about 8.3% (excluding the self-employed on smallholdings) compared with the 5.1% national average (WWF, 2012). The floriculture/horticulture sector is the main responsible for the influx of people in this area as it provides better livelihoods.

Furthermore, the shrinking size of farm properties caused by growing population pressure, and the declining soil fertility caused by poor practices results in more people abandoning agriculture and moving to urban areas (Githaiga et al., 2017a).

Kenya is still an under urbanized country, but is very likely to have 50% of its population living in cities by 2050 (World Bank, 2016), as illustrated by Figure 1. Lake Naivasha is expected to follow this trend, for the reasons mentioned above. Furthermore, a railway line is to be constructed between Nairobi, Naivasha and Nakuru, which should contribute to further urban and industrial expansion in the Naivasha region.

Figure 1- Projection of urban population for Kenya 1950-2050 (World Bank, 2016)



Also, a railway line is projected between Nairobi, Naivasha and Nakuru. This should contribute to the expansion of the urban and industrial areas in this region.

Alternative Scenario 3

Livestock rearing

In Kenya, the livestock sub-sector contributes over 30% of the farm gate value of agricultural commodities, about 10% of the national GDP and at least 50% of the agricultural GDP. In recent years, there has been an increase in the number of heads for the production of meat (Table No 1).

Table 1 Purchases by Licensed Abattoirs, 2010 – 2016 (Kenya National Bureau Of Statistics, 2017)

Type	2010	2011	2012	2013	2014	2015	2016
Cattle and Calves	1924	2103	2194	2147	2077	2275	2460
Sheep and Goats	6163	5837	5924	6085	6139	6561	8220
Pigs	217	224	235	264	257	283	314
Total	8304	8164	8353,8	8496,4	8472,4	9118,2	10994

Livestock rearing (mainly maintaining dairy cattle, sheep and chicken) plays an important role in the livelihood of smallholder farmers in Kenya. On average, each household own 3 dairy cattle, 3 sheep and 6 chickens. The number of animals strongly depends on the amount of land owned, as the main limiting reason for livestock numbers is lack of land for grazing.

In the lower catchment, sedentary agro-pastoralists and pastoralists rear beef cattle, dairy cattle, local goats, sheep, rabbits and poultry, of which the majority is free range, apart from the dairy cattle. The pasture land is not sufficiently large for the number of cattle, which leads to over grazing and land degradation, as well as conflicts among ethnic groups over pastures and water resources. Some dairy farmers practice zero grazing but most of them depend on pastures, including road side grazing, exposing the animals to contamination and disease (Githaiga et al., 2017a).

The majority of the farmers grow fodder, although the area dedicated to this activity is much smaller than the area reserved for food/cash crops, which reduces the capacity to practice zero grazing (Githaiga et al., 2017a).

Alternative Scenario 4

Afforestation/Reforestation activities (without being registered as the A/R CDM project activity)

The forest in the Naivasha basin plays a crucial role in local livelihoods, as a source of firewood, building materials, charcoal, grazing areas, fodder harvesting, herbal medicine and honey.

The upper catchment of the basin is in the Abedares range, which has historically consisted of indigenous forest and open woodland, but has experienced significant changes in land use over the past 50 years, as the forest has been converted into rainfed smallholdings (WWF, 2012). This process impacted the environment, affecting the hydrology of the basin, creating the conditions for flash floods in the wet season and drought in the dry season. It also increased erosion rates, causing higher rates of siltation and impacts in the water quality caused by poor farming practices (WWF, 2012). There are still reports of illegal logging in some areas in the Abedares upper catchment (Case and Services, 2007).

The small size of the farm plots forces the farmers to adopt poor farming techniques (no crop rotation or diversification), resulting in low productivity (Githaiga, 2008). This factor, combined with population growth which lead to further division of the land and land use change, causing further deforestation (Kut and Agevi, 2007).

Furthermore, the increase of population in the basin had an impact on the forestry resources, as the need for firewood, charcoal, timber and construction materials rose dramatically. A decrease in the provision of forest goods and services has been noted by the local population, as a result of resource overuse (Lukorito, n.d.).

Some farmers plant trees at a smaller scale, in the upper catchment. These plantations are intended to ameliorate the escalating problem of water provision in the basin. They consist generally of eucalyptus plantations, for firewood.

Finally, cattle grazing is common inside the forested and riparian areas. This is noteworthy especially because cattle rearing activities are expected to expand as the quality of the soil drops and the effects of climate change become more evident.

STEP 1b **Consistency of credible alternative land use scenarios with enforced mandatory applicable laws and regulations**

Extracted text from the A/R CDM tool:

- Demonstrate that all land use scenarios identified in the sub-step 1a: are in compliance with all mandatory applicable legal and regulatory requirements;
- If an alternative does not comply with all mandatory applicable legislation and regulations then show that, based on an examination of current practice in the region in which the mandatory law or regulation applies, those applicable mandatory legal or regulatory requirements are systematically not enforced and that non-compliance with those requirements is widespread, i.e. prevalent on at least 30% of area of the smallest administrative unit that encompasses the project area;
- Remove from the land use scenarios identified in the sub-step 1a, any land use scenarios which are not in compliance with applicable mandatory laws and regulations unless it can be shown these land use scenarios result from systematic lack of enforcement of applicable laws and regulations.

All land use scenarios from Sub-step 1a apply and are governed by laws and regulations in Kenya. None of the scenarios are eliminated and they are notably common practices under the Kenya Vision 2030.

Generally, these activities abide and are in accordance with Kenyan law and regulations.

It is important to note, however, that the governance structure tends to be weak in this country, aggravated by high corruption levels (Deloitte, 2017). The illegalities concerning land use are often disregarded, as explained in the following paragraphs. These irregularities are usually related to poverty, lack of infrastructure or, very importantly, the degradation of the ecosystem (Case and Services, 2007).

The lack of land for farming due to land division and degradation of the quality of the soil has encouraged some farmers to plant crops in government-owned forested areas, which is illegal. This situation is also exacerbated by widespread poverty, as people look for alternative land to establish cash crops. The lack of firewood and the population growth further encourages the encroachment of alternative land uses in the forest around the Lake Naivasha (Case and Services, 2007).

The abovementioned cases are sporadic and do not represent land uses practices as a whole. Outside the forested areas, these activities are common and legally compliant.

STEP 2 **Barrier Analysis**

STEP 2 **Identification of barriers that would prevent the implementation of land use scenarios in STEP 1b**

The following sections examine the barriers to the implementation for each land use scenario.

Alternative Scenario 1
Agriculture

The main barriers to farmland expansion are availability of land and environmental and soil degradation.

Many farmers are practising subsistence agriculture or minor cash crop production and do not have access to credits (debit funding). Agricultural credit services are available in the basin through various private and public institutions, including private commercial banks (Equity, KCB etc) and SACCOs like Tower, Muki, Tulaga, among others. There are various products designed for farmers, including Uwezo Fund and Equity bank Kilimo Biashara, among others (Githaiga et al., 2017a). Farmers are usually hindered in accessing finance by a lack of security and guarantors, high interest rates and a lack of information on the availability of these services. Farmers prefer borrowing from SACCOS, self- help groups, friends and relatives, *chamas* (friend's groups) and merry go rounds due to their low interest rates, fewer requirements and wider accessibility (Githaiga et al., 2017b). These sources may grant access to funds even to the most disadvantaged farmers.

The available land tends to be scarcer as population grows over time. The population growth associated with the expansion of urban centres means that there will be more demand for food but also less available land. At the same time, the continuous division of the property forces the farmers to adopt worse practices with extensive impact on soil quality. The resulting loss of productivity forces the farmers to include more land dedicated to crop production. There are cases where forest encroachment has been verified, a clear sign of conflict over the land uses.

Nevertheless, despite the identified barriers, agriculture remains the main economic and subsistence activity in

the area. The horticulture/floriculture business benefits from foreign investment in this area. Also, parallel to foreign business development, local farmers also have access to the horticulture market, representing an important opportunity for business development.

Alternative Scenario 2

Urban settlements / Urbanization

Urban settlement expansion in the area faces no barriers.

Alternative Scenario 3

Livestock rearing

The main barrier to the livestock rearing activities is the availability of land.

As the properties have been decreasing in size, it has become more difficult to form or maintain appropriately-sized ranches for dairy or meat production. Furthermore, the declining yields resulting from the degradation of the soil and the small property size don't allow for the extensive plantation of fodder. This forces the producers to seek new pastures to graze, encroaching on forests and riparian areas, spreading further the environmental impact in the area.

Nevertheless, livestock rearing is practised by 78% of the households in the catchment (Case and Services, 2007), being a preferred economic and subsistence activity in the area.

Alternative Scenario 4

Afforestation/Reforestation activities (without being registered as the A/R project activity)

The main barriers to the Afforestation/Reforestation activities are the lack of access to funding, the land availability, the overuse of forest resources and the long investment return periods.

Although some A/R activities took place between 2006 and 2016, they were mainly supported by foreign actors, namely WWF and floriculture companies. However, at times when these actors ceased to continue supporting these activities, they halted. Furthermore, it is recognized by the WWF that the funding for the implementation of the Geta and Kinangop Participatory Forest Management Plan might not be met by the managing institutions, thus necessitating additional funding. Additional funding from external actors is therefore considered necessary to conduct A/R activities in this area.

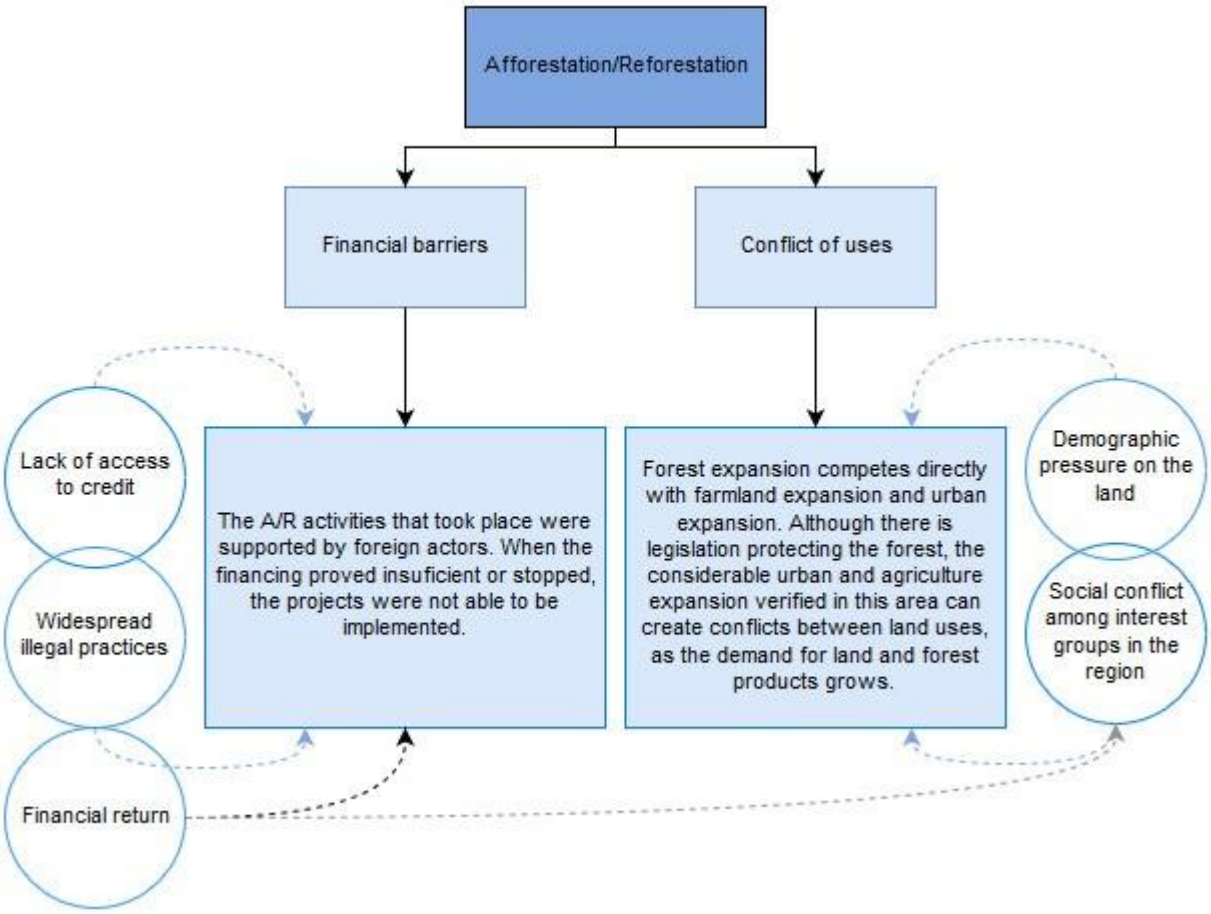
There are no financial incentives to plant forest in the catchment. The only areas that are systematically reforested are the Kenya Forest Service owned forests.

Furthermore, the availability of land is a major problem in the area. With all the land uses competing for the limited space and financial resources, A/R activities are often dismissed as they require a higher opportunity cost, as they have longer return periods and high implementation costs. The expanding horticultural and floricultural activities present a much more attractive financial opportunity.

The expected demographic growth allied with the need for extended farmland area to sustaining such growth will lead to forest encroachment, degradation and deforestation. The limitations associated with cattle rearing further push grazing activities into forested and riparian areas, aggravating degredadtion and so countering A/R activities.

It is also expected that the demographic growth will bring more pressure over the resources of this area, including the forest resources (Lukorito, n.d.), which are in high demand, such as fuelwood, construction materials and others.

Lastly, the lack of governance also poses a threat to the forested areas. As previously stated, encroachment is relatively common. Furthermore, illegal logging also takes place. There are reports of trees being felled even in government gazetted areas, showing total disregard for the laws of the country (Gitonga, 2018).



Source: South Pole, 2018

STEP 2c

Final result

The Lake Naivasha area is a prime area for agricultural development and urban expansion. This is due to a mix of available resources and foreign investment in the horticulture/floriculture business, which is a very strong exportation market. The cut flower industry has seen its market value expand 6 times from 1995 to 2014, making it the world's biggest exporter (Adeya, 2006). Furthermorme, horticulture activities represent a good business opportunity for both small scale and industrial producers. These financial opportunities motivate the influx of people to the Lake Naivasha area, as reflected in the vigorous urban expansion. The rising population exacerbates the need for agricultural land and livestock rearing in order to sustain the internal market.

There are financial incentives to develop these activities, such as access to credit and funding. In the case of floriculture and horticulture, there is foreign investment and a strong international market for these products.These activities do not encounter any substantial barriers that impede their establishment.

On the other hand, forestry activities come up against several constraints. They encounter strong competition from other land uses, as forestry activities generally have a higher opportunity cost, as well as a longer financial return. Furthermore, the market for forest products is not as developed as it is for floriculture/horticulture products. This also makes these forested areas prone to encroachment or clearing, with the objective of establishing other land uses. Forests also face a lack of investment or other types of financial incentives, yet it is virtually impossible for landowners to establish forested areas without financial support. Finally, the strong demographic pressure in the area causes overuse of forestry resources, resulting in forest degradation and deforestation.

The above particularities represent signficiant barriers to the development of this type of land use, putting forest cover conservation at risk in this area.

STEP 4 Common practice analysis

The establishment and management of A/R activities is not common in the project reference area, considering that the area reserved for those activities represents 1.8% of the total vegetal cover in 2016 (WWF – Kenya, 2016). This is very evident when compared with the areas occupied by commercial agriculture and livestock rearing: 47.6% and 4.6%, respectively.

Although the expansion of forested areas has been identified as a priority economic activity in the Kenya Forestry Master Plan, Kenya Forest Policy, and the Environmental Management and Co-Ordination Act (EMCA)(Ministry of Environment and Natural Resources, 2016), the areas reserved for forestry have been reduced through encroachment and excision.

The latest actions related to A/R in Kenya were commercial forest plantations, carried out by Public Private Partnerships (PPP) (FLEGT, 2014). Nevertheless, there are barriers that impede these kinds of activities in the project area (vide step 1). The most important A/R activities barriers are related to a lack of financial aid and the success of other land use activities that compete with it, namely urban expansion, agriculture and livestock rearing (vide step 2).

The farmers in the Naivasha area show resistance to participating in reforestation as a commercial activity because the investment return periods are longer compared to other economic activities.

The forest plantations established so far were strongly dependant on the KFS and the interest of some community members. According to the Forest Law Enforcement, Governance and Trade (FLEGT), the KFS is a young institution that is still trying to surpass certain organizational problems (FLEGT, 2014).

The project activities aim to not only change the land use type from the high impact and degrading ones that are taking place in the area, but also to generate income from carbon sequestration. This source of income would allow one to overcome the barriers described in Section 2 and sustain the A/R activities contemplated in the Kenya Forestry Master Plan and Kenya Vision 2030.

Option 2 – Positive List – Part I

2. The project shall meet **all of the requirements (a), (b) and (c)** in the list below and at least one of the requirements from (d) to (g) in order to be considered as additional under Option 2. (a) The project is located in a Less Developed Country (LDCs) or in a region with a recent *UNDP Human Development Indicator*[2] below 0.8. (b) The project shall have no intention of creating a forest for the commercial use of the timber or non-timber forest products. (c) The project activities shall not be mandatory by any law or regulation, OR if it is mandatory, it shall demonstrate that these laws or regulations are systematically not enforced.	
(a)	…
(b)	…
(c)	…

Option 2 – Positive List – Part II

2. The project shall meet **all** of the requirements (a), (b) and (c) in the list below and **at least one of the requirements from (d) to (g)** in order to be considered as additional under Option 2. (d) The project area is located in a region with a mean annual precipitation of less than 600 mm. (e) The soil pH of the planting area is less than 4.0. (f) The planting area is planted with minimum 5 different native tree species in mixed stands, covering at minimum 50% of the planting area. (g) The project area is located: • In a country or region with a recent *UNDP Human Development Indicator*[1] below 0.5, OR • In a *Small Island Developing State (SIDS)*[3]	
(d)	…
(e)	…
(f)	…
(g)	…

Retroactive submission

3. If the submission to the Pre-Feasibility Assessment was after the planting start, the project proponent shall demonstrate that (a) the revenues from CO_2-certificates were seriously considered in the decision to implement the project, AND

[2] UNDP Human Development Indicator http://hdr.undp.org/en/data/profiles/

[3] Small Island Developing States (SIDS) https://sustainabledevelopment.un.org/topics/sids

(b) there was continuous interest in CO_2-certificates for the project in parallel with its implementation.	
(a)	...
(b)	...

No deforestation

4. The planting area shall not have been *forest*[4] for at least 10 years prior to the planting start, OR In case the planting area was deforested in the 10 years prior to the planting start, evidence shall be provided which demonstrates that the deforestation was caused by force majeure.
The eligibility analysis identified the areas that have not been forest for at least 10 years prior to the planting start. For more information, please refer to PDD, section A.2.

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